

REMARKS

Claims 1, 3-7, 9-12, 14-20 are pending in this application. By this Amendment, claims 21-22 are cancelled, and claims 1 and 12 are amended. No new matter is added.

In the Office Action claims 1, 3-7, 9, 11-12 and 19-22 are rejected under 35 U.S.C. §102(e) over U.S. Patent No. 6,275,600 to Banker. Additionally, claims 10 and 14-17 are rejected under 35 U.S.C. §103(a) over Banker in view of U.S. Patent No. 5,365,310 to Jenkins. These rejections are respectfully traversed.

The amended claims further clarify that they are directed to an image quality analysis system and method that quantify image quality results that are based on human visual system models so that only those differences perceivable by a human viewer are determined. That is, they filter test patterns using a human visual system model and return image quality results that correlate to image quality perceived by a human observer. See Applicants' specification at, for example, page 8, lines 8-17, page 12, lines 20-25, and page 10, line 30 to page 11, line 22.

While Banker is directed to an image quality analysis system, it fails to appreciate the problem overcome by the invention. That is, it does not appreciate correlation of the results to be only those perceivable by a human viewer. The passage referred to by the Examiner on col. 3, lines 15-30 is misunderstood. Banker provides an upper test image 15 intended for visual quality ranking with human intervention (i.e., human manual analysis). It does not form part of the automated image quality analysis, as evidenced by omission of details of image 15 in Fig. 2. Also, since the lower test images 16a-f are specifically taught to be analyzed without human intervention, this confirms the implicit teaching that the upper half 15 is for manual visual ranking only.

Thus, this passage does not teach that the automated image quality results should conform to a human visual system. Rather, since the method recognizes the need for a manual visual image quality analysis, one of ordinary skill would presume that the automated

analysis would operate independent of human perception so as not to be redundant. Further evidence of this may be found on col. 2, lines 50-59 which teaches that a scanner should have at least twice the resolution of the printer. This suggest a higher quality scan and analysis. This requires not only a high quality and more expensive scanner, but may often result in identification of erroneous quality control issues, if the resolution power of the scanner is greatly above that perceivable by a human. In other words, when a high resolution quality analysis is performed, errors/differences may be automatically detected and corrected that could not even have been perceived or appreciated by the human viewer. As such, unnecessary rejection or adjustments may be made.

However, when the results are modeled after a human visual system as claimed, only those differences perceivable by a human vision system are detected. As such, an automated system can detect and correct image quality problems perceivable by a human, without unnecessarily fixing or identifying image quality problems that may be machine detectable, but not human detectable.

The Patent Office also relies on Banker col. 6, lines 53-64. However, this passage also does not teach or suggest filtering to conform the test pattern to a human visual system. A Gaussian function is mentioned, but details are absent. Although it mentions a "perceptible visibility," this only generally states that streaks are counted and ranked by high correlation values. Obviously, bigger streaks will have more visibility, but Banker fails to teach or disclose filtering or modeling so that image quality results correlate to human perceivable deviations. That is, Banker is silent as to the image quality analysis only determining image quality deviations perceivable by a human viewer. The only source of such a teaching is Applicants' specification, the use of which constitutes impermissible hindsight.

Because Banker fails to teach or suggest each and every feature of independent claims 1 or 12, these claims and the claims dependent therefrom define over Banker.

Jenkins fails to overcome the deficiencies of Banker with respect to independent claims 1 and 12.

Moreover because Banker fails to appreciate the problem solved and, if anything, teaches away from the invention by its use of both a human manual inspection and an automated separate analysis that is suggestive of being high resolution (See Fig. 2 & col. 3, lines 15-30), the invention also would not have been obvious from Banker and/or Jenkins.

Withdrawal of the rejections is respectfully requested.

III. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 3-7, 9-12, and 14-20 are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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